

may be a mutation excludes no existing evidence and provides a consistent and attractive working hypothesis by which important advances should be made.—*Bulletin of the American Society for the Control of Cancer.*

CANCER DEATH RATE FOR 1935 HIGHEST ON RECORD*

In a recent analysis of deaths from cancer, Frederick L. Hoffman, LL. D., Biochemical Research Foundation of the Franklin Institute, Philadelphia, points out that the cancer death rate for 184 cities with a population in 1935 of nearly 46,000,000 was 125.6 per hundred thousand of population against a rate of 123.1 in 1934, establishing the highest death rate from this cause since records have been carefully observed. The actual number of deaths in the 184 cities increased from 55,201 in 1934 to 57,309 in 1935, while 107 cities reported increases and seventy-seven decreases in their cancer death rates. The ten cities with the highest cancer death rates were Madison, Wisconsin, 286.8; Concord, New Hampshire, 238.4; Portland, Maine, 229.4; Pasadena, California, 218; Troy, New York, 187.6; Boston, 187.3; Shreveport, Louisiana, 185.2; Pittsfield, Massachusetts, 183.5; Spokane, Washington, 182.8, and Quincy, Illinois, 178. In the five largest American cities, Chicago, Detroit, Los Angeles, New York, and Philadelphia, the highest rate (147.5) was returned for Philadelphia. Detroit was the only city in this group to show a decrease (67.8). Presenting comparative rates in certain foreign countries, Doctor Hoffman points out that Switzerland reported an increase from 115.8 per hundred thousand of population in 1907 to 147.3 in 1934. Death rates, based on specified types, were 43.2 per thousand for cancer of the female genital organs in single women (25 years old and over), compared with 64.6 for married, widowed and divorced women. For cancer of the breast the rate for single women was 54.6, and for married, widowed and divorced women it was 49.1.—*Bulletin of the American Society for the Control of Cancer.*

BLINDNESS AND ITS CAUSES**†

It was with some misgiving that I accepted the assignment of reporting to you some facts about blindness. Available source data are scarce and in many respects unreliable, and unfortunately I do not belong to the group of statisticians who enjoy making estimates that resemble rabbits drawn out of the magician's hat. However, if you are willing to accept the statements for what they are—mere indications of the probable truth—and will focus your attention as much upon what it might be desirable to know as upon what we already know, perhaps I can give you a general background of information.

But why analyze blindness? There are two reasons why analysis is important. In the first place, for the sake of the individual who is blind or potentially blind, it is important that everything possible should be known about his condition. That this is so can be shown by the following case, which is illustrative of many that are to be found in the records of commissions for the blind and schools for the blind. . . .

Our second reason for desiring thorough analysis of cases is that the facts concerning them may be summed up to produce for administrators, who are planning prevention of blindness and work for the blind, the necessary basis for sound planning. For example, the acceptance of routine Wassermanns of pupils in schools for the blind is partly attributable to group statistics showing syphilis to be an important cause of blindness among children.

How shall we analyze blindness? What are the essential facts?

* J. A. M. A., October 3, 1936.

**Address by Miss C. Edith Kerby, Statistician of the National Society for the Prevention of Blindness, at the annual conference of the Society in Columbus, Ohio, afternoon session, Friday, December 4, 1936.

† Under the program of the Social Security Act, commonwealths wishing to receive federal aid in the care of the blind will be expected to keep accurate records. The California Department of Public Welfare is making a study of possible revisions of its examination form blanks.

Perhaps the most frequent question which has come to me concerns the number of blind in the United States or in some particular section of the country. On this point, the enumeration made in 1930 by the Bureau of Census gives the figure 65,431. However, this is admitted by the Bureau of Census to be an understatement. Consequently, in the same year also, the American Foundation for the Blind attempted to estimate the true figure by comparing census figures with registers kept by commissions for the blind in certain states, and arrived at the figure 114,000. Even this figure is open to question, chiefly because the various states differ in their concept of who is to be considered blind.

This brings us to our next point of analysis. If we are to secure data that is worthy of the name "statistics of the blind," we must consider how we shall define the term "blindness." One possible approach to this problem is that all states shall be brought into agreement on the definition of blindness. At the present time, among the thirty-three states having blind relief laws, there are ten which define blindness in terms of degree of vision, but there are seven different degrees, varying all the way from "loss of both eyes" to "visual acuity of 20/200." Fifteen additional states use indefinite statements such as "vision insufficient for tasks for which eyesight is essential." The remaining states have no definition mentioned in their laws. In spite of this variation, there is apparent at the present time a tendency to set the dividing line between the blind and the seeing world at visual acuity of 20/200, and to include in the blind group also individuals who have a peripheral field defect which limits the field of vision to an angular distance no greater than 20 degrees.

Even with a reasonably uniform definition of blindness, it is important to have some knowledge of the varying degree of visual handicap included among "the blind." The man on the street, with no knowledge of the problems involved, will define a blind person as "one who cannot see," by which he usually means an individual who is totally blind or who has light perception only. As a matter of fact, this description would cover about one-half to two-thirds of the persons usually considered blind. Among the recommendations of the Committee on Statistics of the Blind is a classification by degree of blindness which calls for five groupings. In Group 1 are those who are totally blind or who have mere "light perception." In Group 2 are those having "perception of motion" or only a negligible amount of "form perception" (under 5/200). Group 3 covers those having "traveling sight" (visual acuity of 5/200, but not 10/200). Group 4 includes those able to read large headlines (visual acuity of 10/200, but not 20/200). Group 5, or "the border-line" group, includes those having visual acuity of 20/200, and also those whose central visual acuity may be better than 20/200, but who have another visual defect—usually limitation of fields.

In analyzing a case of blindness, vision tests should be sufficiently accurate to enable us to classify the case in accordance with a scheme such as the one outlined. This knowledge of the degree of handicap is of interest not only to the statistician, but also to the administrator or case worker who may wish to use it as a guide in solving training or placement problems. It goes without saying that the ophthalmologist is obviously the best person to make an adequate determination of degree of vision.

The chief reason for selection of an ophthalmologist to give the eye examination, however, is to insure an adequate diagnosis. To be adequate, a diagnosis should indicate not only the part of the eye affected and the nature of its disorder (topographical factor derived from the Greek words meaning "to record the place"), but also the underlying cause of the eye condition (etiologic factor from the Greek "study of causation").

Wherever we have been forced to rely upon the records of old examinations, or upon recent examinations of cases which have occurred years ago, we have found practically no information as to etiology available. As a matter of fact, only the more recent studies of causes of blindness tend to give any etiologic data, although, oddly enough, the older studies did make reference to certain etiologies, such as accidents. With the gradual adoption of the cause of blindness classification of the Committee on Statistics of